

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230217065GZU-001

ISSUE DATE

27-February-2023

REVISION DATE

None

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Report No.: 230217065GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLTS14530X

(Remark: "X" denote other appearance colors for the characters that change)

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>STATEMENT OF LIMITATION:</u>	The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ230216031.
<u>STANDARDS USED:</u>	The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:
IES LM-79: 2008	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377:2017	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model SLTS14530X. The sample was received, in undamaged condition. The sample designation was S230217065-001.
<u>DATES OF TESTS:</u>	22 February 2023
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	SLTS14530X
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLTS14530X

Criteria	Result
Total Lumen Output	389.0 lm
Total Power	7.9 W
Luminaire Efficacy	49.0 lm/W
S/MH(C0/180)	0.64
S/MH(C90/270)	0.63
Correlated Color Temperature (CCT)	2931 K
Color Rendering Index (CRI)	93
R9	79
Chromaticity Coordinate (x)	0.4412
Chromaticity Coordinate (y)	0.4044
Chromaticity Coordinate (u')	0.2532
Chromaticity Coordinate (v')	0.5221

Remark:

Measurement uncertainty for applicable tests has been established.

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TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Goniophotometer System	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard Lamp	D215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	RC-HT601A	SA047-62

GENERAL REMARK

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When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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TEST REPORT

TEST METHOD

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IES LM-79

Light Distribution and Output Measurements

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

Chromaticity Measurements

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system, 4 π geometry, with an interior coating reflectance no less than 95 %. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilise before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using EVERFINE - Digital Power Meter., model PLM3000.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A DC

Standard lamp used for integrating sphere:

Model: 110V/100W

Current: 0.8851A

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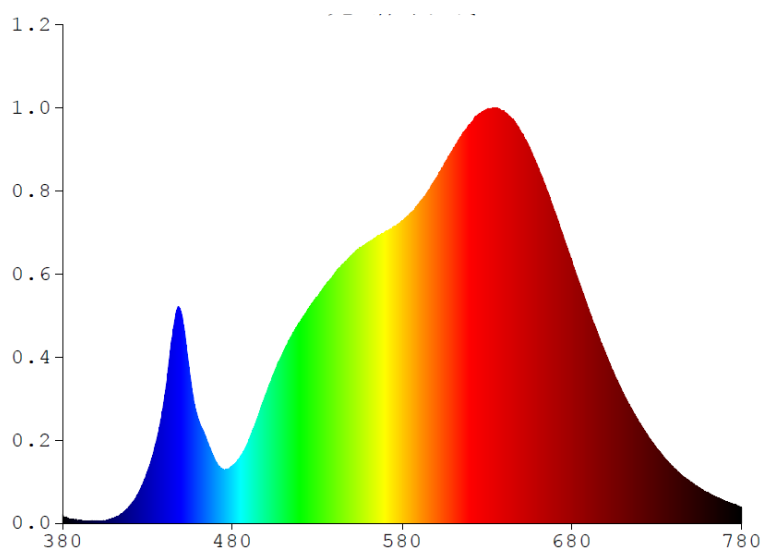
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLTS14530X

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1030	480	0.6581	580	3.4725	680	2.9978	780	0.1768
385	0.0467	485	0.7741	585	3.5570	685	2.7144		
390	0.0341	490	0.9693	590	3.6684	690	2.4382		
395	0.0255	495	1.2170	595	3.8063	695	2.1758		
400	0.0236	500	1.4910	600	3.9585	700	1.9313		
405	0.0301	505	1.7447	605	4.1284	705	1.6988		
410	0.0584	510	1.9643	610	4.2982	710	1.4913		
415	0.1111	515	2.1554	615	4.4471	715	1.3119		
420	0.2097	520	2.3152	620	4.5757	720	1.1462		
425	0.3598	525	2.4639	625	4.6914	725	0.9882		
430	0.5923	530	2.5980	630	4.7343	730	0.8595		
435	0.9209	535	2.7304	635	4.7627	735	0.7373		
440	1.4447	540	2.8582	640	4.7212	740	0.6339		
445	2.1992	545	2.9729	645	4.6371	745	0.5435		
450	2.3982	550	3.0723	650	4.4849	750	0.4725		
455	1.6782	555	3.1637	655	4.3074	755	0.4057		
460	1.1845	560	3.2196	660	4.0791	760	0.3506		
465	0.9483	565	3.2763	665	3.8299	765	0.2986		
470	0.7119	570	3.3456	670	3.5655	770	0.2544		
475	0.6122	575	3.4036	675	3.2170	775	0.2201		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14530X

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

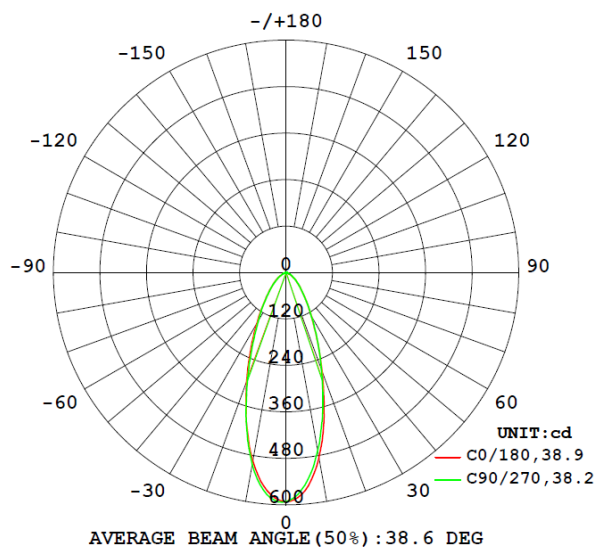
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
SLTS14530X								
S2302170 65-001	--	2931	93	79	0.4412	0.4044	0.2532	0.5221

Photometric and Electrical Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
SLTS14530X							
S2302170 65-001	--	120.2	66.8	7.9	0.990	389.0	49.0

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14530X

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	591.1	591.1	591.1	591.1	591.1
5	564.7	559.3	555.0	552.0	551.4
10	486.7	478.8	472.1	468.3	468.6
15	377.8	371.2	365.9	363.1	365.3
20	271.3	267.3	265.0	264.1	268.1
25	187.9	185.3	184.5	185.3	189.3
30	130.6	128.4	127.5	128.6	131.7
35	91.7	89.8	88.9	89.3	91.4
40	65.3	63.7	62.9	63.0	64.5
45	47.5	46.5	46.0	46.0	46.9
50	34.4	33.7	33.4	33.5	34.3
55	24.0	23.8	23.9	24.1	24.6
60	15.1	15.2	15.7	16.2	16.9
65	8.4	8.6	9.1	9.6	10.4
70	3.8	3.9	4.3	4.7	5.4
75	1.1	1.1	1.3	1.5	1.8
80	0.2	0.3	0.3	0.3	0.4
85	0.1	0.1	0.1	0.1	0.2
90	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0
125	0.1	0.1	0.1	0.1	0.1
130	0.1	0.1	0.1	0.1	0.1
135	0.2	0.2	0.2	0.2	0.2
140	0.3	0.3	0.3	0.3	0.3
145	0.3	0.3	0.3	0.3	0.3
150	0.4	0.4	0.4	0.4	0.4
155	0.5	0.5	0.5	0.5	0.5
160	0.5	0.5	0.5	0.5	0.5
165	0.5	0.5	0.5	0.5	0.5
170	0.4	0.4	0.4	0.5	0.4
175	0.4	0.4	0.4	0.4	0.4
180	0.3	0.3	0.3	0.3	0.3

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14530X

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLTS14530X		
0-30	249.6	64.2
0-40	312.0	80.2
0-60	375.4	96.5
0-90	388.4	99.8
60-90	13.0	3.3
0-180	389.0	100.0

Beam Angle

Total Beam Angle (°)

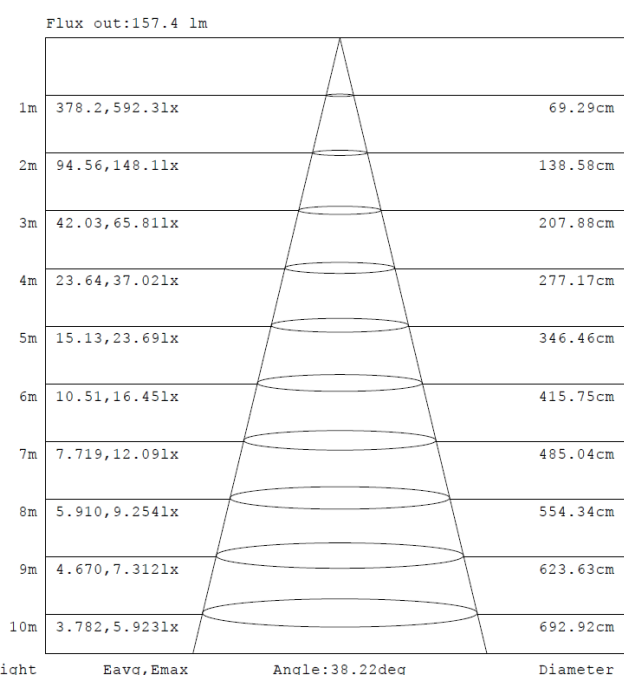
38.6

Illumination Plots

Model No.: SLTS14530X

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

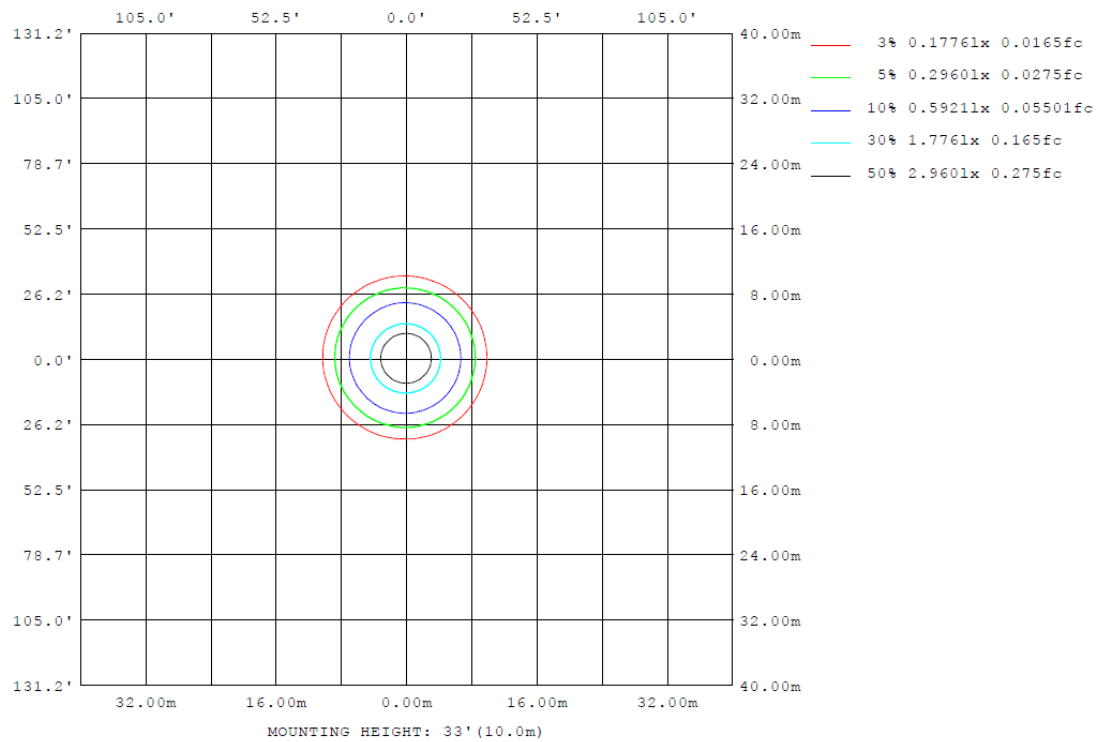
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14530X

Model No.: SLTS14530X

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLTS14530X

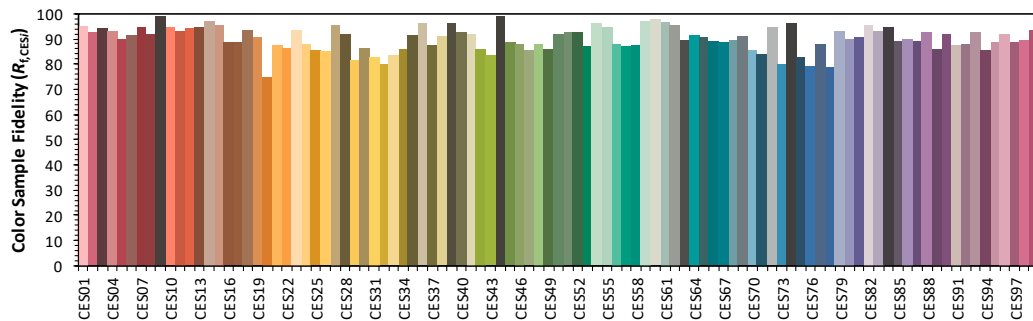
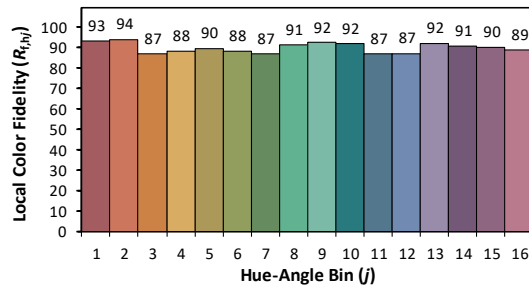
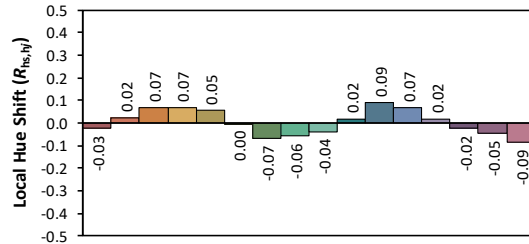
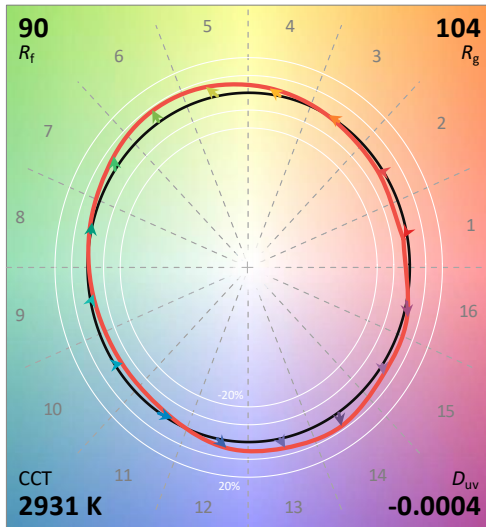
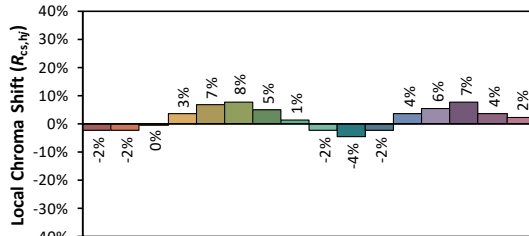
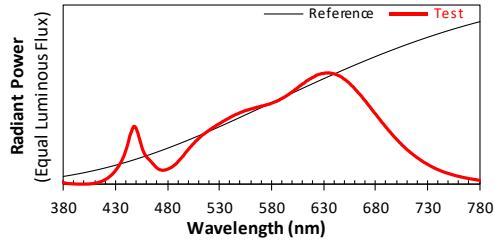
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/2/22

Model: SLTS14530X



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4412
 y 0.4044
 u' 0.2532
 v' 0.5221

CIE 13.3-1995
(CRI)

R_a 93

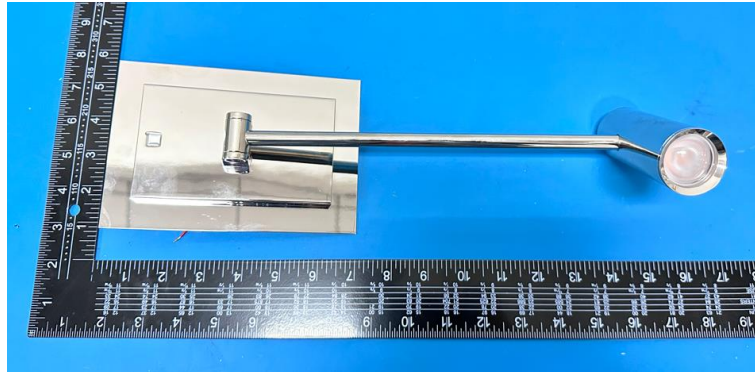
R_g 79

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

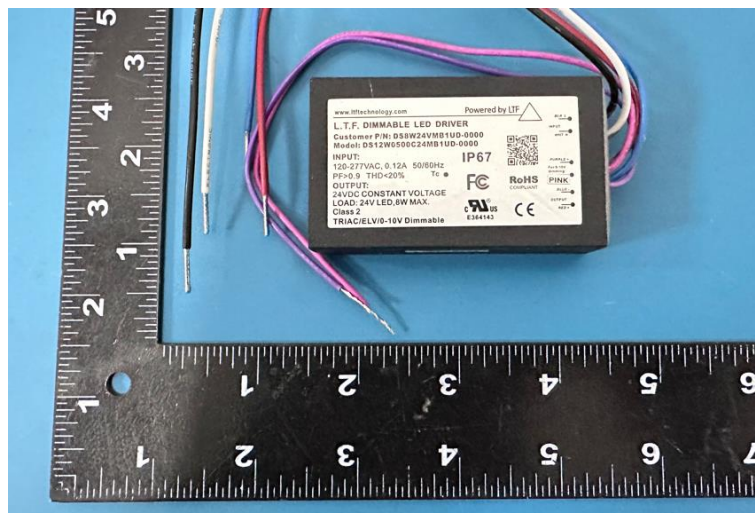
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLTS14530X



View of LED Driver DS8W24VVMB1UD-0000

***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED

In Charge Of Tests:

Done Ye

Report Reviewed By

Shelley Ying

Done Ye
Engineer

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****